What is claimed is:

1. A method for determining the contribution of a pathway to the biosynthesis of a lipid class comprising

determining the level of a marker composition in a precursor,
determining the level of the marker composition in a lipid class,
wherein the precursor is transformed to the lipid class via a pathway,
and wherein the level of the marker composition in the precursor relative to the level of the marker composition in the lipid class is indicative of the contribution of the pathway to the biosynthesis of the lipid class.

2. The method of claim 1, wherein the marker composition is a fatty acid at SN-1 position.

3. The method of claim 1, wherein the marker composition is a fatty acid selected from the group consisting of 16:0, 18:0, 18:1, 18:2, 20:4, and 22:6.

4. The method of claim 1, wherein the level of the marker composition is represented by the level of 18:0 or 16:0.

5. The method of claim 1, wherein the level of the marker composition is represented by the ratio of 18:0 to 16:0.

6. The method of claim 1, wherein the level of the marker composition is represented by the ratio of any two of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

7. The method of claim 1, wherein the level of the marker composition is represented by the ratio of any three of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

8. The method of claim 1, wherein the level of the marker composition is represented by the ratio of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

9. The method of claim 1, wherein the lipid class is phosphatidylcholine.

10. The method of claim 1, wherein the lipid class is phosphatidylethanolamine, cholesterol ester, phosphatidylserine, phosphatidylinositol, cardiolipin, triacylglyceride, diacylglyceride, phosphatidic acid, free fatty acid, sphingomyelin, phosphatidylglycerol, or lysophosphalipids.

11. The method of claim 1, wherein the pathway is phosphatidylethanolamine-N-methyltransferase (PEMT) pathway.

12. The method of claim 1, wherein the pathway is CDP-choline pathway.

13. The method of claim 1, wherein the pathway is phosphatidylserine decarboxylase (PSDC) pathway, CDP-ethanolamine pathway, diacylglyceride acyltransferase (DGAT) pathway, monoacylglyceride acyltransferase (MGAT) pathway, glycerolphosphate acyltransferase (GPAT) pathway, Acyl-CoA:cholesterol acyltransferase (ACAT) pathway, lecithin:cholesterol acyltransferase (LCAT) pathway, phospholipase C pathway, or phosphólipase D pathway.

14. The method of claim 1, wherein the lipid class is phosphatidylcholine, the pathway is phosphatidylethanolamine-N-methyltransferase (PEMT) pathway, and the precursor is phosphatidylethanolamine.

15. The method of claim 1, wherein the lipid class is phosphatidylcholine, the pathway is CDP-choline pathway, and the precursor is selected from the group consisting of diacylglyceride, phosphatidic acid, and triacylglyceride.

16. The method of claim 1, wherein the lipid class is phosphatidylethanolamine, the pathway is phosphatidylserine decarboxylase (PSDC) pathway, and the precursor is phosphatidylserine.

17. The method of claim 1, wherein the lipid class is phosphatidylethanolamine, the pathway is CDP-ethanolamine pathway, and the precursor is selected from the group consisting of 1,2-diacylglyceride, triacylglyceride, and phosphatidic acid.

18. The method of claim 1, wherein the lipid class is in liver, brain, heart, mammary gland, or intestine.

19. The method of claim 1, wherein the lipid class is in plasma.

20. A method of determining the contribution of a first pathway and a second pathway to the biosynthesis of a lipid class comprising

determining P1, wherein P1 is the level of a marker composition in a first precursor of a lipid class,

wherein the first precursor is transformed to the lipid class via the first pathway,

determining P2, wherein P2 is the level of the marker composition in a second precursor of the lipid class,

wherein the second precursor is transformed to the lipid class via the second pathway,

determining TL, wherein TL is the level of the marker composition in the lipid class,

wherein the contribution of the first pathway is represented by (TL-P2)/(P1-P2) and the contribution of the second pathway is represented by (TL-P1)/(P2-P1).

21. The method of claim 20, wherein the marker composition is a SN-1 position fatty acid.

22. The method of claim 20, wherein the marker composition is a fatty acid selected from the group consisting of 16:0, 18:0, 18:1, 18:2, 20:4, and 22:6.

23. The method of claim 20, wherein the level of the marker composition is represented by the level of 18:0 or 16:0.

24. The method of claim 20, wherein the level of the marker composition is represented by the ratio of at least two fatty acids at SN-1 position.

25. The method of claim 20, wherein the level of the marker composition is represented by the ratio of 18:0 to 16:0.

26. The method of claim 20, wherein the level of the marker composition is represented by the ratio of any two of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

27. The method of claim 20, wherein the level of the marker composition is represented by the ratio of any three of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

28. The method of claim 20, wherein the level of the marker composition is represented by the ratio of 18:0, 16:0, 18:1, 18:2, 20:4, and 22:6.

29. The method of claim 20, wherein the lipid class is phosphatidylcholine.

30. The method of claim 20, wherein the lipid class is phosphatidylethanolamine, cholesterol ester, phosphatidylserine, phosphatidylinositol, cardiolipin, triacylglyceride, diacylglyceride, phosphatidic acid, free fatty acid, sphingomyelin, phosphatidylglycerol, or lysophosphalipids.

31. The method of claim 20, wherein the lipid class is phosphatidylcholine, the first pathway is phosphatidylethanolamine-N-methyltransferase (PEMT) pathway, and the second pathway is CDP-choline pathway.

32. The method of claim 20, wherein the lipid class is phosphatidylcholine, the first pathway is phosphatidylethanolamine-N-methyltransferase (PEMT) pathway and the first precursor is phosphatidylethanolamine.

33. The method of claim 20, wherein the lipid class is phosphatidylcholine, the second pathway is CDP-choline pathway and the second precursor is selected from the group consisting of diacylglyceride, phosphatidic acid, and triacylglyceride.

34. The method of claim 20, wherein the lipid class is phosphatidylethanolamine, the first pathway is phosphatidylserine decarboxylase pathway and the second pathway is CDP-ethanolamine pathway.

35. The method of claim 20, wherein the lipid class is phosphatidylethanolamine, the first pathway is phosphatidylserine decarboxylase pathway and the first precursor is phosphatidylserine.

36. The method of claim 20, wherein the lipid class is phosphatidylethanolamine, the second pathway is CDP-ethanolamine pathway and the second precursor is selected from the group consisting of 1,2-diacylglyceride, triacylglycerid, and phosphatidic acid.

37. The method of claim 20, wherein the lipid class is in plasma.

38. The method of claim 20, wherein the lipid class is in liver.

39. The method of claim 20, wherein the lipid class is in brain, heart, mammary gland, or intestine.

40. A method of providing a service comprising providing a signal identifying the contribution of a pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 1.

41. The method of claim 40, wherein the signal is in a computer readable form.

42. The method of claim 40, wherein the signal is accessible by a predetermined entity.

43. The method of claim 40, wherein the sample is provided by an entity and the signal is accessible by said entity.

44. the method of claim 40, wherein the signal further identifies a characteristic of the sample.

45. A method of providing a service comprising providing a signal identifying the contribution of a first pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 20.

46. A method of providing a service comprising providing a signal identifying the contribution of a first pathway and second pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 20.

47. The method of claim 45, wherein the signal is in a computer readable form.

48. The method of claim 45, wherein the signal is accessible by a predetermined entity.

49. The method of claim 45, wherein the sample is provided by an entity and the signal is accessible by said entity.

50. The method of claim 45, wherein the signal further identifies a characteristic of the sample.

51. A database comprising one or more signals, wherein each signal identifies the contribution of a pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 1.

52. A database comprising one or more signals, wherein each signal identifies the contribution of a first pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 20.

53. A database comprising one or more signals, wherein each signal identifies the contribution of a first and second pathway to the biosynthesis of a lipid class in a sample as determined by the method of claim 20.

54. The database of claim 51 in a computer readable form.

55. The database of claim 51 accessible by a pre-determined entity.

56. The database of claim 51, wherein the sample is provided by an entity and the database is accessible by said entity.

57. The database of claim 52 in a computer readable form.

58. The database of claim 52 accessible by a pre-determined entity.

59. The database of claim 52, wherein the sample is provided by an entity and the database is accessible by said entity.

60. The database of claim 53 in a computer readable form.

61. The database of claim 53 accessible by a pre-determined entity.

62. The database of claim 53, wherein the sample is provided by an entity and the database is accessible by said entity.

63. A method of providing a service comprising analyzing the database of claim 51 and providing a signal identifying a profile corresponding to a characteristic of a sample in the database, wherein the profile comprises the contribution of at least one pathway to at least one lipid class.

64. The method of claim 63, wherein the signal is in a computer readable form.

65. A method of providing a service comprising analyzing the database of claim 52 and providing a signal identifying a profile corresponding to a characteristic of a sample in the database, wherein the profile comprises the contribution of at least one pathway to at least one lipid class.

66. The method of claim 65, wherein the signal is in a computer readable form.

67. A method of providing a service comprising analyzing the database of claim 53 and providing a signal identifying a profile corresponding to a characteristic of a sample in the database, wherein the profile comprises the contribution of at least one pathway to at least one lipid class.

68. The method of claim 67, wherein the signal is in a computer readable form.

69. A method of determining the level of a marker composition of phosphatidylcholine in liver comprising determining the level of the marker composition of phosphatidylcholine in plasma.

70. A method of determining the activity of phosphatidylethanolamine-N-methyltransferase (PEMT) pathway in a system comprising determining the level of 20:4n6 or 22:6n3 in the system.

71. A method of identifying a diagnostic marker for a condition comprising

determining the contribution of a pathway to the biosynthesis of a lipid class according to the method of claim 1 in a sample from normal condition and a sample from said condition,

wherein a variation in the contribution of the pathway associated with the sample from said condition, but not associated with the sample from the normal condition is indicative of a diagnostic marker for said condition.

72. A method of identifying a diagnostic marker for a condition comprising

determining the contribution of a first pathway to the biosynthesis of a lipid class according to the method of claim 20 in a sample from normal condition and a sample from said condition,

wherein a variation in the contribution of the first pathway associated with the sample from said condition, but not associated with the sample from the normal condition is indicative of a diagnostic marker for said condition.

73. A method of identifying a diagnostic marker for a condition comprising

determining the contribution of a first pathway and a second pathway to the biosynthesis of a lipid class according to the method of claim 20 in a sample from normal condition and a sample from said condition,

wherein a variation in the contribution of the first and second pathway associated with the sample from said condition, but not associated with the sample from the normal condition is indicative of a diagnostic marker for said condition.

74. A method for determining the contribution of Acyl-CoA:cholesterol acyltransferase (ACAT) to the biosynthesis of cholesterol ester in plasma comprising determining a relative level, wherein the relative level is the level of a saturated fatty acid in cholesterol ester from plasma relative to the level of the saturated fatty acid in cholesterol ester from liver and

wherein the relative level is indicative of the contribution of ACAT to the biosynthesis of cholesterol ester in plasma.

75. A method for determining the contribution of lecithin:cholesterol acyltransferase (LCAT) to the biosynthesis of cholesterol ester in plasma comprising determining the contribution of Acyl-CoA:cholesterol acyltransferase (ACAT) to the biosynthesis of cholesterol ester in plasma according to the method of claim 74, wherein the contribution of LCAT corresponds to total cholesterol ester in plasma excluding the contribution of ACAT to the biosynthesis of cholesterol ester in plasma.